1. A DNA construct that alters expression of an endogenous G-CSF gene in a mammalian cell upon integration into the genome of the cell via homologous recombination, the construct comprising: (i) a targeting sequence containing at least 20 contiguous nucleotides from SEQ ID NO:5 and (ii) a transcriptional regulatory sequence.

2. The DNA construct of claim 1, wherein the construct further comprises an exon and a splice-donor site.

3. The DNA construct of claim 2, wherein the construct further comprises, downstream from the splice-donor site, an intron and a splice-acceptor site.

4. The DNA construct of claim 1, wherein the construct further comprises a selectable marker gene.

5. The DNA construct of claim 1, wherein the targeting sequence contains at least 50 contiguous nucleotides from SEQ ID NO:5.

6. An isolated nucleic acid comprising at least 20 contiguous nucleotides of SEQ ID NO:5 or its complement, wherein the isolated nucleic acid does not encode full-length G-CSF.

7. The isolated nucleic acid of claim 6, wherein the isolated nucleic acid comprises at least 50 contiguous nucleotides of SEQ ID NO:5 or its complement.

8. The isolated nucleic acid of claim 6, wherein the isolated nucleic acid comprises at least 100 contiguous nucleotides of SEQ ID NO:5 or its complement.

9. The isolated nucleic acid of claim 6, wherein the isolated nucleic acid comprises at least 200 contiguous nucleotides of SEQ ID NO:5 or its complement.

10. The isolated nucleic acid of claim 6, wherein the isolated nucleic acid comprises at least 500 contiguous nucleotides of SEQ ID NO:5 or its complement.

11. The isolated DNA of claim 6, wherein the isolated nucleic acid comprises nucleotides 1470 to 4723 of SEQ ID NO:5, or its complement.

12. The isolated DNA of claim 6, wherein the isolated nucleic acid comprises SEQ ID NO:5 or its complement.

13. An isolated nucleic acid comprising a strand that comprises a nucleotide sequence that (i) is at least 100 nucleotides in length and (ii) hybridizes under highly stringent conditions with SEQ ID NO:5 or the complement thereof.

14. The isolated nucleic acid of claim 13, wherein the nucleotide sequence is at least 200 nucleotides in length.

15. The isolated nucleic acid of claim 13, wherein the nucleotide sequence is at least 400 nucleotides in length.

16. The isolated nucleic acid of claim 13, wherein the nucleotide sequence is at least 1,000 nucleotides in length.

17. An isolated nucleic acid comprising a strand that comprises a nucleotide sequence that (i) is at least 100 nucleotides in length and (ii) shares at least 80% sequence identity with a fragment of SEQ ID NO:5 having the same length as the nucleotide sequence.

18. The isolated nucleic acid of claim 17, wherein the nucleotide sequence is at least 200 nucleotides in length.

19. The isolated nucleic acid of claim 18, wherein the nucleotide sequence is at least 400 nucleotides in length.

20. The isolated nucleic acid of claim 18, wherein the nucleotide sequence is at least 1,000 nucleotides in length.

21. A homologously recombinant cell stably transfected with the DNA construct of claim 1, the DNA construct having undergone homologous recombination with genomic DNA upstream of the ATG initiation codon of an endogenous G-CSF coding sequence.

22. A homologously recombinant cell stably transfected with the DNA construct of claim 2, the DNA construct having undergone homologous recombination with genomic DNA upstream of the ATG initiation codon of an endogenous G-CSF coding sequence.

23. A homologously recombinant cell stably transfected with the DNA construct of claim 3, the DNA construct having undergone homologous recombination with genomic DNA upstream of the ATG initiation codon of an endogenous G-CSF coding sequence.

24. A homologously recombinant cell stably transfected with the DNA construct of claim 4, the DNA construct having undergone homologous recombination with genomic DNA upstream of the ATG initiation codon of an endogenous G-CSF coding sequence.

25. A method of altering expression of an endogenous G-CSF gene in a mammalian cell, the method comprising

introducing the DNA construct of claim 1 into the cell;

maintaining the cell under conditions which permit homologous recombination to occur between the construct and a genomic target site homologous to the targeting sequence, to produce a homologously recombinant cell; and

maintaining the homologously recombinant cell under conditions which permit expression of the G-CSF coding sequence under the control of the transcriptional regulatory sequence.

26. A method of altering expression of an endogenous G-CSF gene in a mammalian cell, the method comprising

introducing the DNA construct of claim 4 into the cell;

maintaining the cell under conditions which permit homologous recombination to occur between the construct and a genomic target site homologous to the targeting sequence, to produce a homologously recombinant cell; and

maintaining the homologously recombinant cell under conditions which permit expression of the G-CSF coding sequence under the control of the transcriptional regulatory sequence.

27. A method of delivering G-CSF to an animal, comprising

providing the cell of claim 21, and

implanting the cell in the animal, wherein the cell secretes G-CSF.

28. A method of delivering G-CSF to an animal, comprising

providing the cell of claim 22, and

implanting the cell in the animal, wherein the cell secretes G-CSF.

29. A method of delivering G-CSF to an animal, comprising

providing the cell of claim 23, and

implanting the cell in the animal, wherein the cell secretes G-CSF.

30. A method of delivering G-CSF to an animal, comprising

providing the cell of claim 24, and

implanting the cell in the animal, wherein the cell secretes G-CSF.

31. A method of producing G-CSF, comprising

providing the cell of claim 21, and

culturing the cell *in vitro* under conditions which permit the cell to express and secrete G-CSF.

32. A method of producing G-CSF, comprising

providing the cell of claim 22, and

culturing the cell *in vitro* under conditions which permit the cell to express and secrete G-CSF.

33. A method of producing G-CSF, comprising

providing the cell of claim 23, and

culturing the cell *in vitro* under conditions which permit the cell to express and secrete G-CSF.

34. A method of producing G-CSF, comprising

providing the cell of claim 24, and

culturing the cell *in vitro* under conditions which permit the cell to express and secrete G-CSF.